

**COLORADO RIVER RECOVERY PROGRAM  
FY 2002-2003 PROPOSED SCOPE OF WORK:**

**Project #: 15**

Lead Agency: Larval Fish Laboratory, Colorado State University

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<u>Category:</u>	<u>Expected Funding Source:</u>
<input checked="" type="checkbox"/> Ongoing project	<input checked="" type="checkbox"/> Annual funds
<input type="checkbox"/> Ongoing-revised project	<input type="checkbox"/> Capital funds
<input type="checkbox"/> Requested new project	<input type="checkbox"/> Other (explain)
<input type="checkbox"/> Unsolicited proposal	

I. Title of Proposal: **Identification and Curation of Larval and Juvenile Fish by Colorado State University Larval Fish Laboratory.**

II. Relationship to RIPRAP:

General Recovery Program Support Action Plan

- V. Monitor populations and habitat and conduct research to support recovery actions (research, monitoring, and data management).
  - V.A. Measure and document population and habitat parameters to determine status and biological response to recovery actions.
    - V.A.1. Conduct standardized monitoring program.
    - V.A.2. Conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program.
  - V.E. Provide for long-term care, cataloging, and accessibility of preserved specimens.

III. Study Background/Rationale and Hypotheses:

A part of this project provides Larval Fish Laboratory (LFL) taxonomic services for processing and curating preserved fish collections from the Interagency Standardized Monitoring Program (ISMP) for fall young-of-the-year pikeminnow in Utah and Colorado. Data are submitted to the source agencies, Utah Division of Wildlife

Resources (UDWR, Moab) and U. S. Fish and Wildlife Service (USFWS, Grand Junction) for inclusion in Recovery Programs reports on results of the monitoring effort.

The other part of this project provides for ongoing curation (maintenance and management) of the growing Upper Colorado River Basin (UCRB) portion of the LFL Collection. LFL now holds an estimated 3.8 million specimens in over 75,000 taxon-specific lots from the UCRB as voucher for the Recovery Implementation Program (RIP) and earlier UCRB investigations. These collections are an invaluable long-term historical resource for future reference and research. Some collections are a quarter century old, dating back to 1976. Backlog cataloguing of pre-1994 UCRB collections will be completed in FY 2001.

Most UCRB specimens taken since 1994 have been cataloged as part of collection processing (identification, counts, and measurements). As the holdings of the LFL Collection become better known, we expect use of UCRB collections will increase substantially, both within and outside RIP.

As part of the curatorial portion of this project, we continue to pursue arrangements to help ensure collection permanency. In part through the efforts of the principal investigator for this project, preliminary plans are underway for administratively and physically consolidating most of the university's various natural history research collections (including the LFL Collection) to provide better long-term recognition, support, and facilities as a functional unit of Colorado State University.

#### IV. Study Goals, Objectives, End Product:

The project goal is to provide taxonomic and curatorial services for the RIP. Specific objectives for FY 2002-2003 are to:

- (1) Support other RIP researchers by processing, cataloging, and curating preserved fish in collections submitted to LFL under this project; and
- (2) Continue curation (maintenance and management) of all cataloged UCRB specimens in the LFL Collection.

The end products for FY 2002-2003 will be:

- (1) Computer database files and printed report(s) of collection contents submitted to RIP researchers providing collections for processing under this project; and
- (2) Continued maintenance, management, and availability of the growing cataloged collection of preserved fish which serve as voucher for RIP investigations and provide a long-term RIP and public resource for further reference and research.

#### V. Study Area:

The RIP collections identified, processed, and curated by LFL were or will be collected from cool to warm-water reaches throughout the Upper Colorado River Basin, exclusive of the San Juan River subbasin.

#### VI. Study Methods/Approach:

Collection Processing—We will identify, count, measure, catalog, and curate preserved specimens (mostly larval and juvenile fish) from fall 2001 and 2002 ISMP collections seined from the Colorado River by the U.S. Fish and Wildlife Service (Grand Junction) and from the Colorado and Green Rivers by the Utah Division of Wildlife Resources (Moab). Identification of specimens is based on available taxonomic keys, criteria developed by LFL, and the expertise of LFL personnel. Specimen data include

total counts by species, 10-mm length frequencies, individual lengths for endangered species and other *Gila*, and dorsal and anal principal fin ray counts for *Gila* species. Data are entered in computer database files (dBase or Access) and results are detailed and summarized in printed data reports for the source agencies. The database files are also submitted to RIP's Interagency Data Management Program (IDMP) to complement related files subsequently deposited by the source agencies. As part of processing, the collections are cataloged, appropriately labeled, and sequentially organized on LFL Collection shelving.

Ongoing Curation—The LFL Collection will continue to serve as the depository for small fish from preserved RIP Collections. Methods for receiving, accessioning, cataloging, maintaining, and managing use of these preserved specimens are provided in our draft "Larval Fish Laboratory Collection Policies and Procedures Manual" (Appendix II, Snyder 1996). We will respond to internal and external requests for collection information and use of specimens; RIP approval will be required for any destructive use or transfer of endangered or rare species. As of the end of FY2001, the collection catalog should be fully converted from MUSE to SPECIFY collection management software. We will continue our effort to ensure collection permanency, in part through planned consolidation of Colorado State University natural history research collections.

VII. Task Description and Schedule:

Task 1, Collection Processing—Fall-Winter 2001-2002 and 2002-2003; as soon as possible after receipt of fall 2001 and 2002 ISMP collections.

Task 2, Ongoing Curation—Throughout both fiscal years.

VIII. FY-2002-2003 Work:

- Deliverables/Due Dates: LFL will prepare and submit collection database files (dBase or Access) files and printed data reports for fall 2001 and 2002 ISMP collections to source agencies—Utah Division of Wildlife Resources in Moab and U.S. Fish and Wildlife Service in Grand Junction. Database files will also be deposited with the IDMP. Annual project reports will be submitted to RIP by or shortly after the end of each fiscal year.
- Budget:

FY 2002 Costs:

	LFL
<u>Task 1 (Collection Processing*)</u>	
Labor	
Taxonomists/PIs (0.8 months)	\$3,819
Technicians (2.3 months)	6,877
Supplies**	1,469
Other (LFL Maintenance)	608
Total Direct Costs	12,773
Indirect Cost (15% TDC)***	1,916
Task Subtotal (Direct & Indirect Costs)	14,689
<u>Task 2 (Ongoing Curation)</u>	
Labor	

Curator/PIs (2.5 months)	\$14,764
Collection Manager (1.5 months)	5,224
Work-study Technicians (1.0 month)	454
Travel	1,000
Supplies	650
Other (LFL maintenance)	1,105
Total Direct Costs	23,197
Indirect Cost (15% TDC)***	3,479
Task Subtotal (Direct & Indirect Costs)	26,676
 FY 2002 TOTAL	 41,365
 FY 2003 Costs:	 LFL
<u>Task 1 (Collection Processing*)</u>	
Labor	
Principal Investigators (0.8 months)	\$4,010
Technicians (2.3 months)	7,221
Supplies**	1,543
Other (LFL maintenance)	638
Total Direct Costs	13,412
Indirect Cost (15% TDC)***	2,012
Task Subtotal (Direct & Indirect Costs)	15,424
 <u>Task 2 (Ongoing Curation)</u>	
Labor	
Curator/PIs (2.5 months)	\$15,502
Collection Manager (1.5 months)	5,485
Work-study Technicians (1.0 month)	477
Travel	1,050
Supplies	683
Other (LFL maintenance)	1,160
Total Direct Costs	24,357
Indirect Cost (15% TDC)***	3,654
Task Subtotal (Direct & Indirect Costs)	28,011
 FY 2003 TOTAL	 43,435

\* Based on a modification of LFL's standard taxonomic services rate schedule and the average number and size of fall ISMP collections received in recent years (62 collections, 324 specimens per collection in 1998; 55 collections, 246 specimens per collection in 1999, and 63 collections, 828 per collection in 2000; average 60 collections, 466 specimens per collection). The substantial increase in average size of ISMP fall monitoring collections processed in recent years (due to the very large size of Year 2000 collections) accounts for much of the increase in costs for this portion of the project and the total budgets for FY 2002 and 2003 over the estimate in our FY 2001 SOW and RIP's FY 2002 Program Guidance.

For our earlier estimate, we also assumed a reduction in the number of preserved collections to be processed (revised back to about 60 for this budget and future estimates).

\*\* 80% vials and jars; 10% preservative, labels, trays, etc.; 10% project-specific computer and office supplies.

\*\*\*Assumes MOU in which the University covers the remainder of standard 45% indirect cost rate.

FY-2004-2005 Work (for multi-year study)

- Deliverables/Due Dates: LFL will prepare and submit collection database files (dBase or Access) files and a printed data report for fall 2003 and 2004 ISMP collections to source agencies—Utah Division of Wildlife Resources in Moab and U.S. Fish and Wildlife Service in Grand Junction. Database files will also be deposited with the IDMP. Annual project reports will be submitted to RIP by or shortly after the end of each fiscal year.
- Budget Estimates:  
FY 2004: \$45,607 (FY 2003 budget plus 5%).  
FY 2005: \$47,887 (FY 2004 budget estimate plus 5%)

IX. Budget Summary:

FY-2002	\$ 41,365
FY-2003	<u>\$ 43,435</u>
Total	\$ 84,800

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FY-2004	\$ 45,607 (estimate
FY-2005	<u>\$ 47,887</u> (estimate)
Total	\$ 93,494 (estimate)

X. Reviewers: None

XI. References:

Snyder, D. E. 1996. Preserved larval and small-fish collections of the Upper Colorado River Basin: maintenance and cataloging of a valuable historical database. Final Report of the Larval Fish Laboratory, Colorado State University, to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, U.S. Fish and Wildlife Service, Denver, Colorado. (24 April 1996).